S6161-SU-FSE-010
0910-LP-621-1200

MIXING MACHINE, FOOD, ELECTRIC

12 QT. CAPACITY
MODEL 1
STYLE 1
SRM12

FED. SPEC. 00-M-38K/GL/
CONTRACT NO: SPO441-94-M-3210
NSN: 7320-01-382-5622
DATE: 94 MAR 16

MFG: UNIVEX CORPORATION
3 OLD ROCKINGHAM ROAD
SALEM, N.H. 03079

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APPROVAL AND PROCUREMENT RECORD PAGE

APPROVAL DATA FOR: Defense General Supply Center Technical Manual for Food Mixing Machine, 12 Qt. Capacity, Model No. SRM12.

APPROVAL AUTHORITY: Defense General Supply Center letter dated 94 MAR 16

Contract Number	NSN	Number of Units	Voltage/ Other ID	CID/APL
SPO441-94-M-3210	7320-01-382-5622	17	120V,60HZ,1PH	

REMARKS: This manual supersedes Manual(s) all revisions.

CERTIFICATION: DATE: 94 MAR 16

It is hereby certified that the DGSC Technical Manual for Mixing Machine, Food, Electric, 12 Qt. Capacity, Model No. SRM12, to be provided under Contract DLA, has been approved by the approval data shown above.

Dan Netti, Documentation Manager
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IDENTIFYING TECHNICAL PUBLICATION SHEET
FOR
COMMERCIAL MANUAL/SUPPLEMENTAL DATA

1. Purpose: This Identifying Technical Publication Sheet is used for the purpose of identifying and authorizing the following Commercial Manual for Defense Logistics Agency.

Manufacturer: Univex Corporation
3 Old Rockingham Road
Salem, N.H. 03079

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National Stock No.: NSN7320-01-382-5622
Title: Manual - Operation, Maintenance and Repair
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4. Authority Notice, Distribution Statement, Disclosure Notice - Defense General Supply Approval letter dated 94 MAR 16

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES

LIST OF EFFECTIVE PAGES

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. change to illustrations are indicated by miniature pointing hands. Changes to diagrams are indicated by shaded areas.

Dates of issue for original and changed pages arc:

Original.....

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS CONSISTING OF THE FOLLOWING:

Page No.	* Change No.	Page No.	* Change No.
A-F	0		
1 through 38	0		

* Zero in this column indicates an original page.

SAFETY SUMMARY

The following are general safety precautions that are not related to any specific procedures and therefore do not appear elsewhere in this publication. These recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

KEEP AWAY FROM LIVE CIRCUITS

Operation personnel must at all times observe all safety regulations. Do not replace components or make adjustments inside the equipment with the high voltage supply turned on. Under certain conditions, dangerous potentials may exist when the power control is in the off position, due to charged retained in capacitors. To avoid casualties, always remove power and discharge and ground a circuit before touching it.

DO NOT SERVICE OR ADJUST ALONE

Under no circumstances should any person reach into or enter the enclosure for the purpose of servicing or adjusting the equipment except in the presence of someone who is capable of rendering aid.

RESUSCITATION

Personnel working with or near high voltage should be familiar with modern methods of resuscitation. Such information may be obtained from the Bureau of Medicine and Surgery.

The following warnings and cautions appear in the text in this volume and are repeated here for emphasis.

WARNING
Dual power supply which requires both sources of voltage must be de-energized prior to working on equipment.

CAUTION
If the motor drive runs at maximum speed when the speed control is set to the low end, immediately remove the power from the unit and have an electrician check the wiring.

WARNING
Disconnect electrical power for safety

WARNING/CAUTION
Do not put hands, spoons or utensils in bowl while the mixer is operating.

WARNING
Never install or remove an attachment while the mixer is running.
Always turn it off for safety.

WARNING
Never work on the transmission with the mixer running.
It is recommended that the electrical service
be disconnected to prevent accidental start up.

CHANGE RECORD

Change No.	Date	Title/Brief Description	Signature of Validating Officer. No.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

Our new SRM (SAFETY RING MIXERS) feature advanced "user-friendly" safety centering around a removable bowl guard. In addition to coming on and off easily, these safety rings are dishwasher safe.

- By design, this welded one-piece stainless steel ring assembly allows clear visibility of the product throughout the mixing cycle.
- Each safety ring guard is equipped with twin locating pins which enable the guard to key lock securely in position during the mix cycle.
- Dual micro interlock switching acts as double protection against the mixer operating without the safety ring guard locked in place.
- Additional micro switching stops mixer operation when the bowl is lowered from its up or mixing position.
- For additional safety and operational ease, each SRM mixer is equipped with an instant/off push button switch and oversized red mushroom-style emergency off cap.
- These momentary contact "Stop & Start" push buttons and contactor provide low voltage protection and prevent accidental start up in the event of a power failure.

INTRODUCTION

For SAFETY sake, we would appreciate everyone involved to take the time to give this Manual a quick read. Included in this manual are the following:

Operator Safety

Installation Tips

Care and Preventive Maintenance

Operational Information

Detail Parts List and Service Data

OPERATOR SAFETY

READ AND MAKE SURE THAT YOU UNDERSTAND INSTRUCTIONS AND SAFETY WARNINGS BEFORE ATTEMPTING TO OPERATE THE MIXER OR ATTACHMENTS.

NEVER PUT FINGERS OR HANDS IN THE BOWL WHILE THE MIXER IS OPERATING OR SERIOUS INJURY COULD RESULT.

NEVER ATTEMPT TO CLEAR A JAMMED ATTACHMENT OR STALLED MIXER WITHOUT SHUTTING THE POWER OFF. DISCONNECT THE ELECTRICAL PLUG FROM ELECTRICAL OUTLET.

INSPECTION

All Univex mixers are carefully tested and inspected prior to packaging to assure both the quality of the machine as well as the inclusion of all requested options, attachments and voltage.

However, upon unpacking all items should be carefully checked to verify that they are correct.

Any damage, imperfection, or shortages should be reported immediately to your Dealer or Directly to UNIVEX CUSTOMER SERVICE, Toll Free 1-800-258-6358.

INSTALLATION

In selecting the most ideal location for your New SAFETY RING MIXER, it is helpful to consider the following:

- Where is the best location for the operator, both for saving steps and easy viewing?
- Is this a good location for product flow as in:

  Easy to get ingredients to the mixer?

  Destination of the mix after mixing?
- Is there existing electrical service at this location?
- Does this location provide easy access for cleaning and service?
- Check to be sure that your mixer with attachments does not extend out into heavy traffic areas.
- If stands and/or portable equipment are used along side of your mixer, can they be moved easily to and from your mixer?
- The chrome cap plugs included in your manual package are supplied to cap shipping bolt holes (Fig. 1 [13]) in mixer base if base is not anchored.

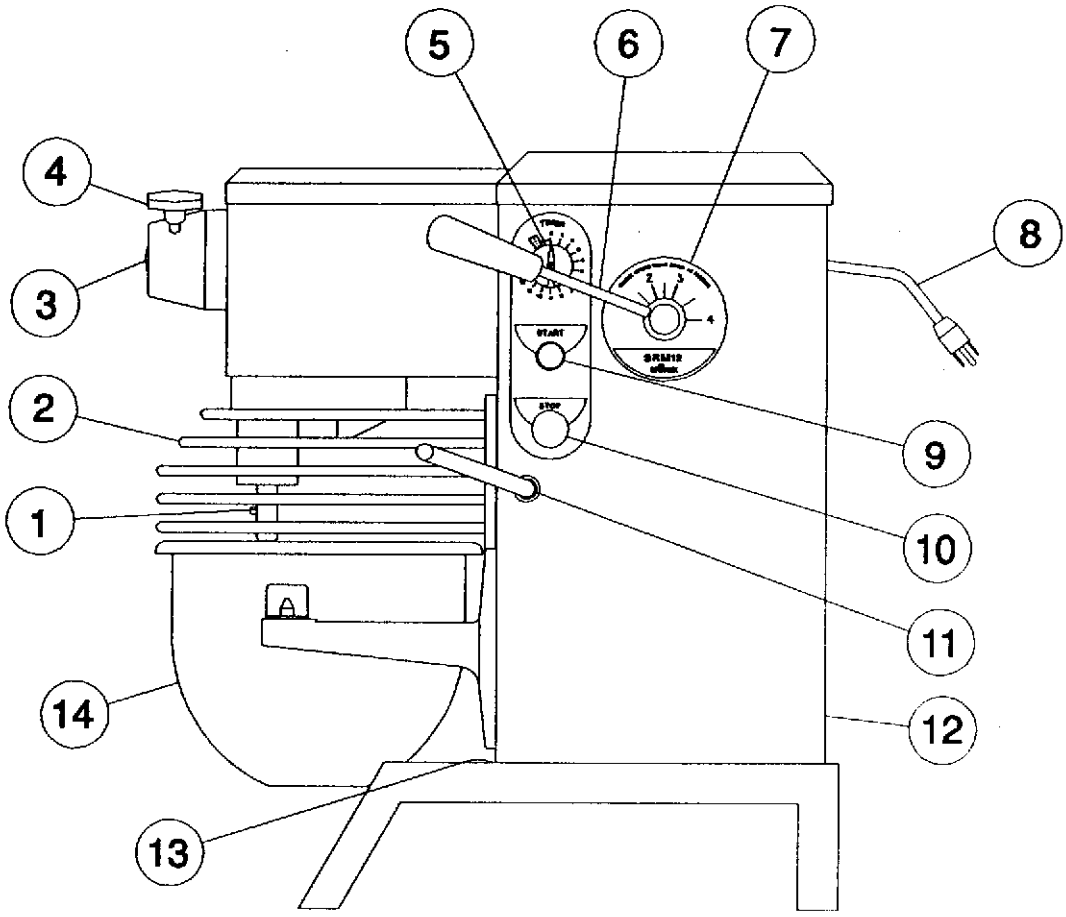
WARRANTY

The SRM12 SAFETY RING MIXER is warranted by UNIVEX CORP. against defects in material and workmanship for a period of 18 months from date of delivery.
Damages incurred in transit or from installation error, accident, alteration or misuse are not covered. Transit damages should be reported to the carrier immediately.

IMPORTANT

WARNING: Electrical wiring instructions are found in the wiring diagram (Figures 14). Before making electrical connections, CHECK the specifications on the nameplate to make sure that they agree with those on your electric service.

OVERALL VIEW OF FOOD MIXER
Figure 1



1. BEATER SHAFT
2. SAFETY RING ASSEMBLY
3 NO. 12 HUB
4. THUMB SCREW
5. TIMER (OPTIONAL)
6. SPEED CONTROL HANDLE
7. SPEED INDICATOR LABEL
8. CORD
9. START SWITCH
10. STOP SWITCH
11. BOWL LIFT HANDLE
12. REAR ACCESS PANEL
13. CHROME CAP
14. BOWL

OPERATING INSTRUCTIONS

Read and make sure that you understand instructions and safety warnings before attempting to operate the mixer or attachments.

Our Univex mixer is designed to meet the cook's and baker's demand for an efficient, dependable mixer. Our mixer will give unfailing performance over a period of years, when operated and maintained according to instructions contained herein. The machine drives various attachments through a vertical shaft to beat, mix or whip liquid, viscous or dry materials. The vertical shaft is driven by a motor with power transmitted by a variable speed "V" belt unit through a gear train and a planetary gear set. The machine is equipped with a power-take-off, which operates other attachments. The vertical shaft can be varied from approximately 125 to 300 revolutions per minute (RPM), the power-take-off speed from 145 to 340 RPM.

START/STOP CONTROLS (OPTIONAL TIMER)

The mixer is started by pushing the start switch (Fig. 1 [9]). When a mixer is equipped with the optional timer (Fig. 1 [5]) first set the timer to the desired time then push the start switch.

The timer may be set for up to 15 minutes duration or may be set on HOLD position for continuous operation. When setting a time less than 5 minutes, turn knob beyond 5 minutes and then return to the desired time.

Note: The mixer can only be started when the Safety Ring is in place and the bowl is in the raised position.

SPEED CONTROL

Unlike other mixers, you can change speeds while the mixer is running. With UNIVEX you DO NOT have to stop to change speeds!

Change speeds only while mixer is running. To change speeds move lever (Fig. 1 [6]) to desired speed. Speed indicator label (Fig. 1 [7]) shows 4 speeds.

Number 1 or slow speed is for heavy mixtures like bread or roll dough. This speed should also be used for meat and food chopper attachment. In most mixing operations, start on number 1 and change to higher speeds as work progresses. Medium speeds for medium work, high speeds for whipping cream, beating eggs, and thin batters. Refer to the Table of Mixer Capacities with attachment and speed recommendations on page 9. To prevent damage to your mixer, you should follow these limits and recommendations.

WARNING: DO NOT PUT HANDS, SPOONS OR UTENSILS IN BOWL WHILE THE MIXER IS OPERATING.

BOWL LIFT

The bowl is raised or lowered by a lift handle (Fig. 1 [11]) on right side of mixer. It is necessary to lower the bowl to change beaters. This also makes the bowl accessible for filling.

BEATER, AGITATORS AND BOWLS

When assembling an agitator, the bowl (Fig.1 [14]) must be in the down position. Slip the agitator on beater shaft (Fig.1 [1]) and turn counter- clockwise to engage drive pin. Agitators of various styles are available, each suited to a particular job.

The batter beater (Fig.3 [A]) used in low and medium speeds is commonly used for thin batter, cakes, and mashing potatoes. The wire whip (Fig.3 [B]) used in medium and high speeds is best for whipping cream and beating eggs. Four other style beaters are available. The dough hook (Fig.3 [C]) used on low speed only for heavy bread dough; and the pastry knife (Fig.3 [D]) used at medium speed only for cutting shortening into flour for pastry. The four wing beater (Fig.3 [E]) is used for whipping potatoes and icings in low and medium speeds, as well as for whipping of mayonnaise and other light work in medium or high speeds. The sweet dough beater (Fig.3 [F]) is used to mix sweet doughs, doughnuts and confections in low speed only.

Each beater, whip and hook has been designed to do a particular type of work. Use them only for the work for which they were designed. Failure to follow this advice could result in damage to either the attachment or the machine.

IMPORTANT

IF YOU NOTICE ANY SLIPPAGE WITH ANY MIX, YOU MAY BE OVERLOADING YOUR MIXER. CUT BACK LOAD OR REDUCE SPEED UNTIL ACTION ROTATES SMOOTHLY. CHECK CAPACITY CHART ON PAGE 9. IF MIXER JAMS OR MOTOR STALLS, IMMEDIATELY TURN MIXER OFF WITH STOP SWITCH. NEVER PUT HANDS INTO BOWL TO CLEAR A JAM.

ATTACHMENTS

Some of the more popular attachments are vegetable slicer and shredder, and meat and food chopper. The attachment hub (Fig.1 [3]) is for the #12 tapered attachments. Before using attachments, stop motor, then insert with a slight twist, align pin on attachment with hole in P.T.O., firmly set in place, tighten the thumb screw (Fig.1 [4]). The attachment drive has 4 speeds controlled by the speed control handle.

WARNING: THE CHOPPER ATTACHMENTS MUST NEVER RUN FASTER THAN SPEED 1 WHEN CUTTING MEAT, BUT WHEN CUTTING VEGETABLES IT MAY RUN AT MEDIUM SPEED. NEVER INSTALL OR REMOVE AN ATTACHMENT WHILE THE MIXER IS RUNNING. ALWAYS TURN MACHINE OFF AND DISCONNECT PLUG FOR SAFETY.

OPERATORS CARE OF MIXER

CLEANING

1. **WARNING:** Disconnect Electric Power Supply Before Cleaning. Wash body of mixer, the saddle and beater shaft with warm water and mild soap (do not use abrasive pads). Keep water from safety ring keyhole slots. Do Not Rinse with Hose. Dry mixer thoroughly, using a soft cloth.

2. Wash bowl and beater immediately after using. If egg mixtures or flour batters were used, rinse with cold water before washing with hot.
   Safety ring may be washed in the same manner or can also be put in your dishwasher.

3. Dry bowls, beaters and safety ring thoroughly and hang up to prevent damage.

4. Lubricate shaft after washing.

6. Do Not Cover unit with plastic bag, as THIS TRAPS HUMIDITY into your mixer

OPERATOR PREVENTIVE MAINTENANCE

Overloading is the # 1 cause of mixer failure. Read and understand the capacity chart.

Lack of Lubrication is the # 2 cause of mixer failure. If you hear a change in the sound of the mixer transmission, it may need grease.

Changing speed with the mixer off will cause belts to become loose and mixer will not turn. (see troubleshooting guide). It is good to get in the habit of returning back to 1st speed before shutting machine off.

UNIVEX FOOD MIXERS - MIXING CAPACITIES

MODEL		SRM12
Bowl Capacity - Liquid Quarts		12
Attachment Hub Size		#12 Hub
Motor		1/3 HP
Kitchen Capacities Single Batches	**Agitators**	
Mashed Potatoes	A	10 Lbs.
Whipping Cream	B & E	2 1/2 Qts.
Mayonnaise (Qts. of Oil)	A, B, E	4 1/2 Qts.
Egg Whites	B	1 1/4 Pts.
Meringue (Quantity of Water)	B	3/4 Pts.
Waffle or Hot Cake Batters	A	5 Qts.
Bakery Capacities Single Batches		
** Raised Doughnut Dough, 65% AR		
* Heavy Bread Dough, 55% AR		
*Bread & Roll Dough (Light to Medium), 60% AR	C	13 Lbs.
* Pizza Dough, Thin, 40% AR		
* Pizza Dough, Med., 50% AR		
* Pizza Dough, Thick, 60% AR		
Pie Dough	D	11 Lbs.
Sugar Cookies	A	20 Dz.
Pound Cake	A	12 Lbs.
Box or Slab Cake	A & E	12 Lbs.
Cup Cakes	A & E	12 Dz.
Layer Cakes	A & E	12 Lbs.
Short Sponge Cakes	B & E	8 Lbs.
Sponge Cake Batter	B & E	6 1/2 Lbs.
Angel Food (No. of 8-10 oz. Cakes)	B & E	7
Marshmallow Icing	E	1 1/4 Lbs.
Fondant Icing	A	7 Lbs.
Shortening & Sugar Creamed	A	9 1/2 Lbs.
Egg & Sugar for Sponge Cake	A & E	5 Lbs.

Code of Agitators: (See Fig. 3)

A - Batter Beater
B - Wire Whip
C - Dough Hook
D - Pastry Knife
E - Four Wing Beater

Code of Speeds: * 1st Speed only ** 2nd Speed Only

These commonly used seeds are for the capacities listed. Larger capacities require a reduction in speeds.

The dough capacity whether for breads, rolls, pizza, bagels or raised donuts depends on the moisture content of the dough. Absorption ratio % is the weight of the water divided by the weight of the flour. As the % AR is lower, the dough is stiffer and more difficult to mix.

_ 1 gal water = 8.3 lbs.
_ If high gluten flour is used, reduce total capacity by 10%.
_ AR below 40% will reduce total capacity.

MECHANICS MAINTENANCE

Every six months a mechanic should perform the following inspection and maintenance as required:

1. REMOVAL OF TOP COVER

a. The top cover (Fig. 13 [11]) must be removed in order to perform the maintenance operations. It is secured by a spring clip at its front end and a screw at its rearward end. First, DISCONNECT THE ELECTRICAL POWER FOR SAFETY. Then, remove the screw in the rear (Fig. 13 [19]), lift rear of cover, push forward about 3 inches and lift cover off

b. Re-install in reverse procedure using care to insure that the cover sits squarely and uniformly on the mixer housing.

2. BELT

a. **WARNING:** Start mixer and adjust speed control (Fig. 1 [6]) to speed 4. Stop mixer. **FOR SAFETY, DISCONNECT POWER.**

b. Remove top cover (Fig. 13 [11]) and rear access panel (Fig. 13 [20]).

c. Check belt (Fig. 12 [2]. If broken, glazed or worn, replace.

d. Check belt (Fig. 12 [2]) for proper tension. The outer edge of the belt should be flush with the outer diameter of the variable speed pulley (Fig. 12 [1]). If not, adjust by loosening the jam nut (Fig. 12 [11]) and turning the connecting rod (Fig. 11 [17]) until the outer edge of belt is flush with the outer diameter of the pulley. Retighten jam nut.

3. MOTOR

Check motor (Fig. 12 [19]) for overheating, noise and excessive end play. Replace if defective.

4. BOWL LIFT - ADJUSTMENT: (Fig. 9 and 10)

a. Place 12 qt. mixing bowl (Fig. 1 [14]) in bowl support and 12 qt. batter beater (Fig. 3 [A]) on beater shaft (Fig. 1 [1]).

b. Raise bowl support to the high position.

c. Check clearance between bottom of bowl and lowest point of batter beater. Clearance should be 3/16 inch, plus or minus 1/16 inch.

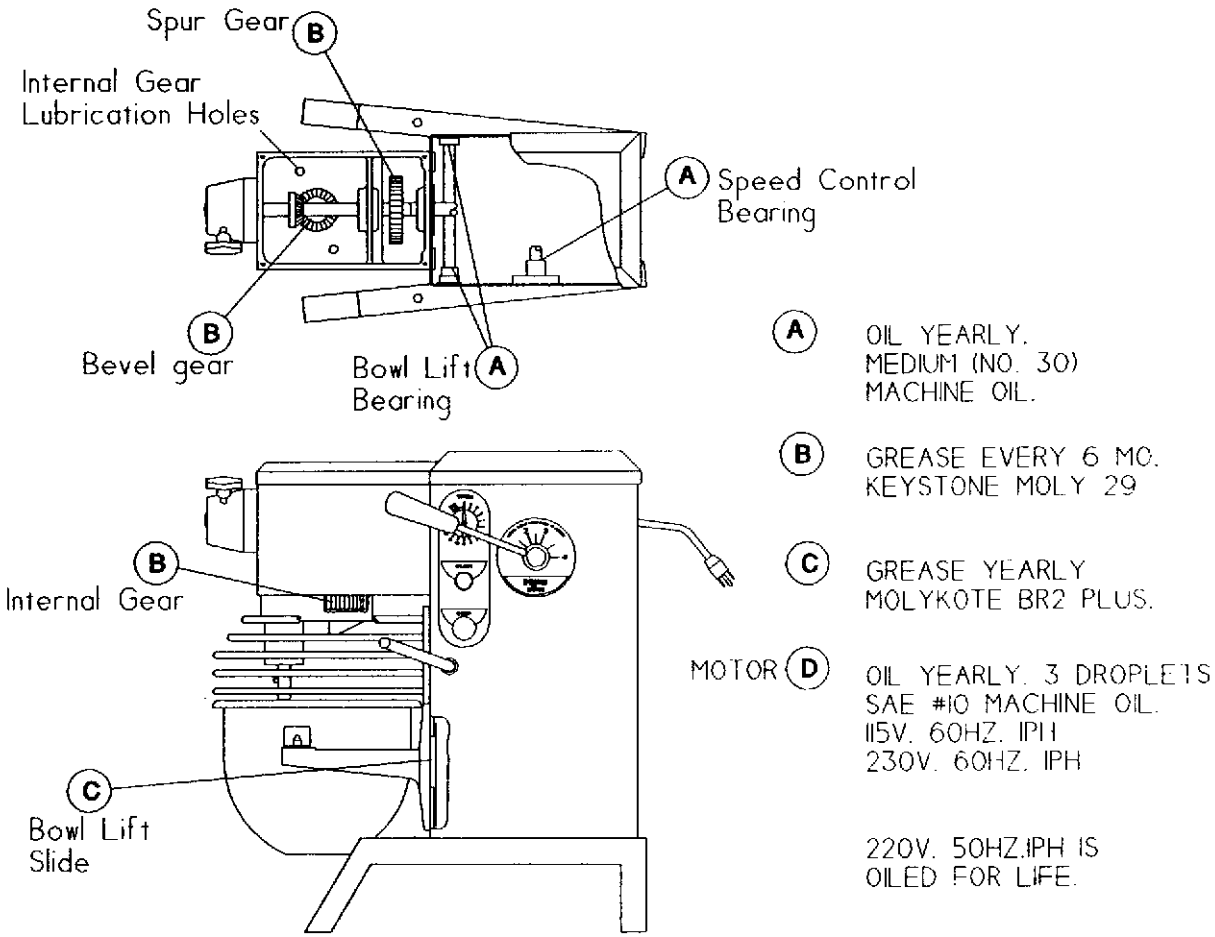
d. If adjustment is required, disconnect power, loosen bolts (Fig. 10 [10]) and raise or lower bowl until desired clearance is obtained. Retighten bolts.

5. LUBRICATION

The lubrication instructions are in Fig. 2. The transmission and beater head gearing are packed with heavy tacky moly grease. They must be re-packed twice a year.

<u>WARNING</u>: NEVER WORK ON THE TRANSMISSION WITH THE MIXER RUNNING. IT IS RECOMMENDED THAT THE ELECTRICAL SERVICE BE DISCONNECTED TO PREVENT ACCIDENTAL START UP.

LUBRICATION INSTRUCTION
Figure 2



TROUBLESHOOTING GUIDE

TROUBLE	POSSIBLE CAUSE	REMEDY
1. Mixer will not operate	1.1 Electrical service down	1.1 Check electrical service. Replace fuse or reset circuit breaker as necessary.
	1.2 Burned switch contacts	1.2 Replace.
	1.3 Timer not turned on	1.3 Turn timer on.
	1.4 Motor capacitor defective	1.4 Replace
	1.5 Burned out motor	1.5 Remove, test, repair or replace.
	1.6 SAFETY RING not mounted	1.6 Install SAFETY RING ASSY
	1.7 Bowl not raised	1.7 Raise bowl completely
2. Mixer runs but beater will not turn	2.1 Speed changed while mixer not running	2.1 While mixer is running, move speed control lever slowly forward then back
	2.2 Broken or slipping belt	2.2 Broken or slipping belt
	2.3 Key or Pin sheared on input shaft input gear, bevel pinion, vertical shaft or beater shaft	2.3 Locate by step inspection and replace defective part.
3. Slippage of agitator during mixing	3.1 Loose belts	3.1 Tighten belt.
	3.2 Mixer bowl is over-loaded	3.2 Readjust contents of bowl per table of contents.
	3.3 Speed is set too high for the mix	3.3 Shift speed lower till action rotates smoothly.
4. Speeds will not change	4.1 Loose belts	4.1 Tighten or replace
	4.2 Vari-speed pulley inoperable	4.2 Remove, clean and lubricate or replace.
5. Attachments contact bottom of bowl	5.1 Dented bowl	5.1 Remove dent or replace bowl.
	5.2 Insufficient clearance between bottom of bowl and beater	5.2 Readjust bowl lift
	5.3 Misalignment of transmission in relation to bowl support	5.3 Realign transmission.
6. Excessive noise	6.1 Gears need to be repacked with grease	6.1 Locate source by inspection and repack with grease.
	6.2 Badly worn or frayed drive belts	6.2 Replace belts.
	6.3 Attachments hitting bowl	6.3 Inspect for cause Ref: 5.1 and 5.2.
	6.4 Overloaded mixing bowl	6.4 Readjust contents of bowl per table of mixing capacities.
7. Difficulty in raising or lowering bowl	7.1 Lack of adequate lubricant on bowl lift slide assembly and housing	7.1 Lubricate with grease per Figure 2

REPAIR INSTRUCTIONS

(including disassembly, replacement and reassembly.)

TRANSMISSION (Fig. 4)

Removal

1. **WARNING:** Disconnect power for safety.

2. Remove housing top cover (Fig. 13 [11]).

3. Adjust speed control to high speed; loosen belt retainer (Fig. 12[4]), remove V-belt (Fig. 12 [2]) from transmission drive pulley (Fig. 12 [3]). Remove drive pulley and key (Fig. 7 [9]), loosen set screws on mounted bearing (Fig. 7 [8]).

4. **CAUTION:** Transmission assembly is heavy and must be supported prior to removing. Remove four cap screws (Fig. 4 [10]) securing transmission housing to mixer housing. Remove transmission assembly and place on work bench.

5. Remove transmission cover (Fig. 4 [2]). Remove grease from transmission and clean with cleaning solvent, applied with clean cloth.

6. Rotate gear train by hand and inspect for worn or chipped gears, bent shafts, worn bearings and excessive backlash. Backlash measured at gear teeth exceeding 1/32" is considered excessive. After trouble has been isolated, proceed to disassemble.

Disassembly

1. **Beater Head Assembly** (Fig. 5)

   a. Remove cap screw (Fig. 5 [12]) and remove beater head assembly.
   NOTE: Screw has left handed thread.

   b. Remove drive pin (Fig. 5 [1]); top retaining ring (8); gear (9); key (3), bottom retaining ring (8); retaining ring (7) and press shaft and bearings from housing (10).

   c. Press bearings (4 & 6) along with spacer (5) from shaft (2).

   NOTE: If gear (Fig. 5 [9]) requires replacement, replace internal gear (Fig. 4 [12]) also.

2. **Power Take Off Assembly** (Fig. 6)

   a. Remove three cap screws (Fig. 6 [11]), retaining ring (2), gear (8) and withdraw assembly from housing.

   b. Remove adapter (1), retaining ring (5) and press shaft (10) bearing and gear assembly from housing (13).

   c. Remove pin (17), gear (6), remaining rings (2), key (9) and press bearing (4 & 7) from shaft (10).

   NOTE: If gear (Fig. 5 [9]) requires replacement, replace internal gear (Fig. 4 [12]) also.

3. **Input Assembly** (Fig. 7)

   a. Remove retaining ring (Fig. 7 [4]) and withdraw assembly from transmission.

   b. Remove retaining ring (13), and press bearing (1) from shaft (11) .

   c. Remove retaining rings (12) and slide gear (2) from shaft (11).

   d. Remove Woodruff key (10) and press bearing (3) from shaft (11).

      NOTE: If gear (Fig. 5 [9]) requires replacement, replace internal gear (Fig. 4 [12]) also.

4. **Vertical Shaft Assembly** (Fig. 8)

   a. Remove key (1).

   b. Invert housing on suitable support and press shaft (2) from transmission housing (Fig. 4 [1]).

   c. Remove lower bearing (3) with puller and remove spacer (4).

   d. Remove retaining ring (5) and pull or press upper bearing (7) from transmission housing (Fig. 4 [1]).

   e. Remove pin (6) and press shaft (2) from gear (8).

Reassembly

   a. Clean all components except bearings with safety approved cleaning solvent. Inspect components for defects and replace those found to be defective.

      NOTE: If gear (Fig. 5 [9]) requires replacement, replace internal gear (Fig. 4 [12]) also. All gears should be replaced as sets.

   b. If shafts have become slightly scored during the disassembly process, polish the shafts with fine machinists crocus cloth. Use care to avoid excessive removal of shaft surface or proper fit of components will be lost.

   c. Reassembly should be carried out in the reverse of the disassembly procedures stated above. Successful reassembly is very dependent on the cleanliness of all surfaces particularly the bores of housings, gears and bearings as well as the outer surface of shafts. It is well to recheck each component for cleanliness as it is picked up for reassembly. New keys and roll pins should be used on reassembly.

   d. Transmission should be progressively checked for smooth operation while on the workbench by hand turning each assembly as it is installed.

   e. Lubrication of the transmission should be done following its installation on the mixer. Apply Keystone Moly 29 grease to the spur gear and bevel gear meshes. Caution should be exercised to avoid entrapment of the application implement in the gear teeth.

Bowl Lift Assembly (Fig. 9 and 10)

a. **WARNING:** Disconnect electrical power for safety.

b. Remove housing top cover (Fig. 13 [11]) and rear access panel (Fig. 13 [20]).

c. Remove two cap screws (Fig. 10 [10]). Remove four cap screws (Fig. 10 [11]), remove bowl support (Fig. 10 [1]) and slide plate (Fig. 10 [3]) and gibbs (Fig. 10 [7]).

CAUTION: Bowl support must be supported while screws are being removed in order to prevent it from falling.

NOTE: Plastic shims may exist between slide plate and gibbs.

d. Remove fixed slide cover (Fig. 13 [33]) by removing six nuts (Fig. 13 [7].

e. Remove retaining ring (Fig. 9 [8]) from cam pin. Slide link (Fig. 9 [7]) from cam pin.

f. Remove screw (Fig. 9 [6]) and loosen collar set screw [4] and pull lever [11] from housing.

g. Remove four nuts (Fig. 9 [9]) and lift off bearings [3].

h. Clean and inspect sliding surfaces for excessive wear.

i. Replace parts showing excessive wear.

j. Lubricate sliding surfaces with grease.

k. Reassemble and reinstall in the reverse of the above procedure.

l. Check clearance between batter beater and bowl per Mechanics Maintenance paragraph 4. a-d and readjust as necessary.

SPEED CONTROL ASSY. (Fig. 11)

Disassembly

1. Remove housing cover (Fig. 13 [11]) and rear access panel (Fig. 13 [20]).

2. Remove retaining ring (15). Remove rod end (16) from cam assembly (12). Loosen set screws (11) in cam assembly (12).

3. Drive roll pin (21) from hub (3) and pull hub (3), lever (2), and handle (1) from cam assembly shaft (12). Remove washer (20) from cam assembly (12).

4. Unscrew hub (3) and handle (1) from lever (2).

5. Remove nut (18 and washer (19) from studs holding speed control bearing (5) to housing (Fig. 13 [1]).

6. Withdraw bearing (5) and remaining assembly from housing (Fig. 13 [1]).

7. Pull cam assembly (12) from bearing (5).

8. Remove screws (8), lock washers (7), strap (6), and spring (9) from bearing (5).

9. Remove screws (14) and detent disk (13).

Reassemble

10 Reassemble in reverse of above procedure. Grease cam assembly shaft (12) and detent disk (13) during assembly with MolyKote BR2 Plus or general purpose bearing grease. Adjust belt as described in Mechanics Maintenance 2 paragraph a,d-f.

11 If speed control handle (1) moves while the mixer is running, tighten set screws (11) against spring washer (10) until movement stops.

VARI-SPEED ASSEMBLY (Fig 12)

Disassembly

1. Remove housing cover (Fig. 13 [11]) and rear access panel (Fig. 13 [20]) as described in Mechanics Maintenance Sect. 1.

2. With mixer off and in low speed shift to high speed. Remove nut (5), washer (6) and belt retainer (4) from housing.

3. Unwrap belt (2) from driven pulley (3) and pull from vair-speed pulley (1).

4. Loosen set screw on pulley (3) and remove from shaft.

5. Looren power lead connections of motor cord (22) at the contactor or starter. Remove ground lug from housing. Remove nuts (15), washers (14) and cord clamps (13) securing motor cord (22) to mixer housing.

6. Loosen jam nut (11) and unscrew connecting rod (Fig.11 [17]).

7. Remove nuts (5), washers (6), straps (20) and rails (21).

8. Rotate motor (19) and mount (8) so that motor shaft is pointing up. Next rotate motor assy. 90° and remove through rear of housing.

9. Remove connection box plate on end of motor. Remove motor cord (22) leads. Loosen set screws securing pulley (1) to motor shaft. Slide pulley from motor shaft.

10. Removr nuts (5), washers (6) and remove motor (19) from mount (8).

Reassemble

. Reassemble in reverse of above procedure. The following guidelines should be observed.

1 Be sure motor rotation and voltage has been checked when a new motor in being installed.

2 Grease all sliding surfaces of motor slide assy. .

3 Be sure motor mount (8) fits tightly between rails (21). First tighten the rail (21) and strap (20) closest to the front of the mixer housing. With mount assy. held firmly against rail (21) install and adjust secound rail and strap against mount and tighten with washers (6) and nuts (5).

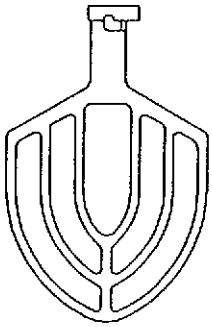
4 Adjust belt tension per procedure described in mechanics maintenance 2.d.

HOUSING (Fig 13)

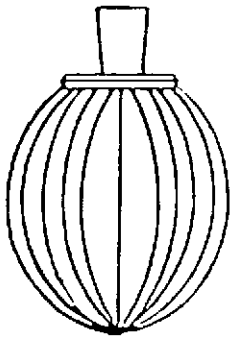
For the remaining parts which have not been discussed pertain to electrical components and the housing, Figures 13, 14A and 14B should provide adequate guidance for the disassembling and reassembling of these parts.

BEATERS, AGITATORS AND BOWLS
FIGURE 3

A Batter Beater
1012231

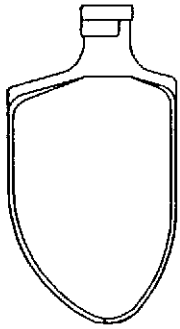


B Wire Whip
1012149

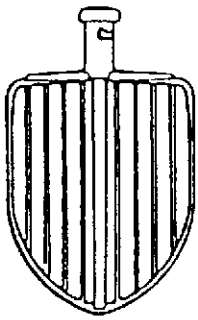


C Dough Hook
* 1012232

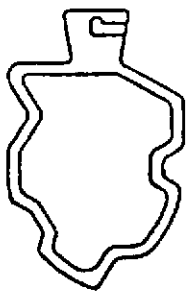
D Pastry Knife
* 1012233



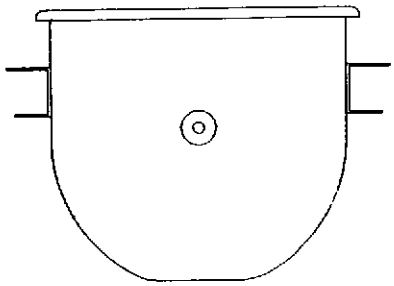
E Four Wing Beater
* 1012297



F Sweet Dough Beater
* 1012238



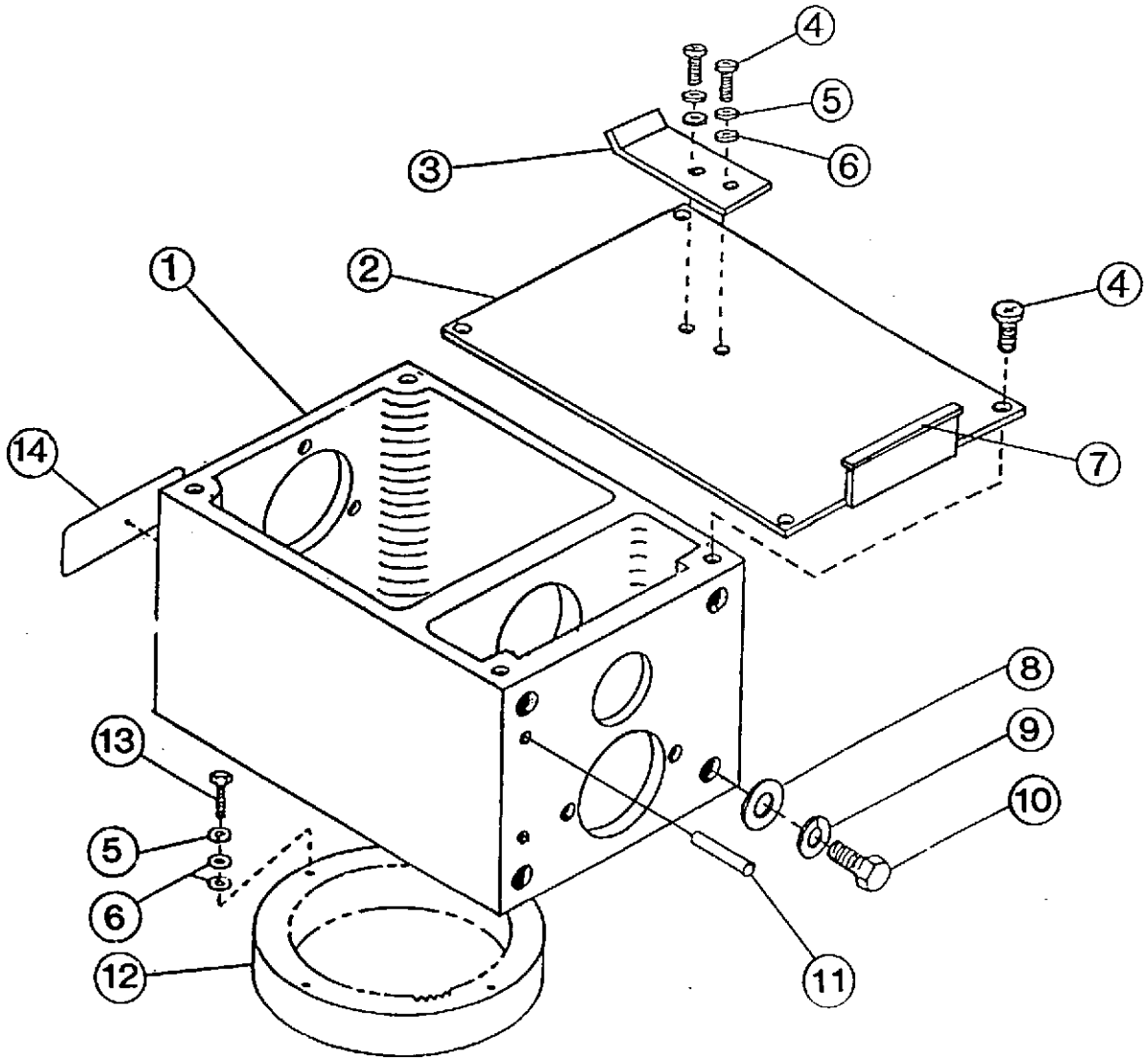
G Bowl
1013194



*** OPTIONAL**

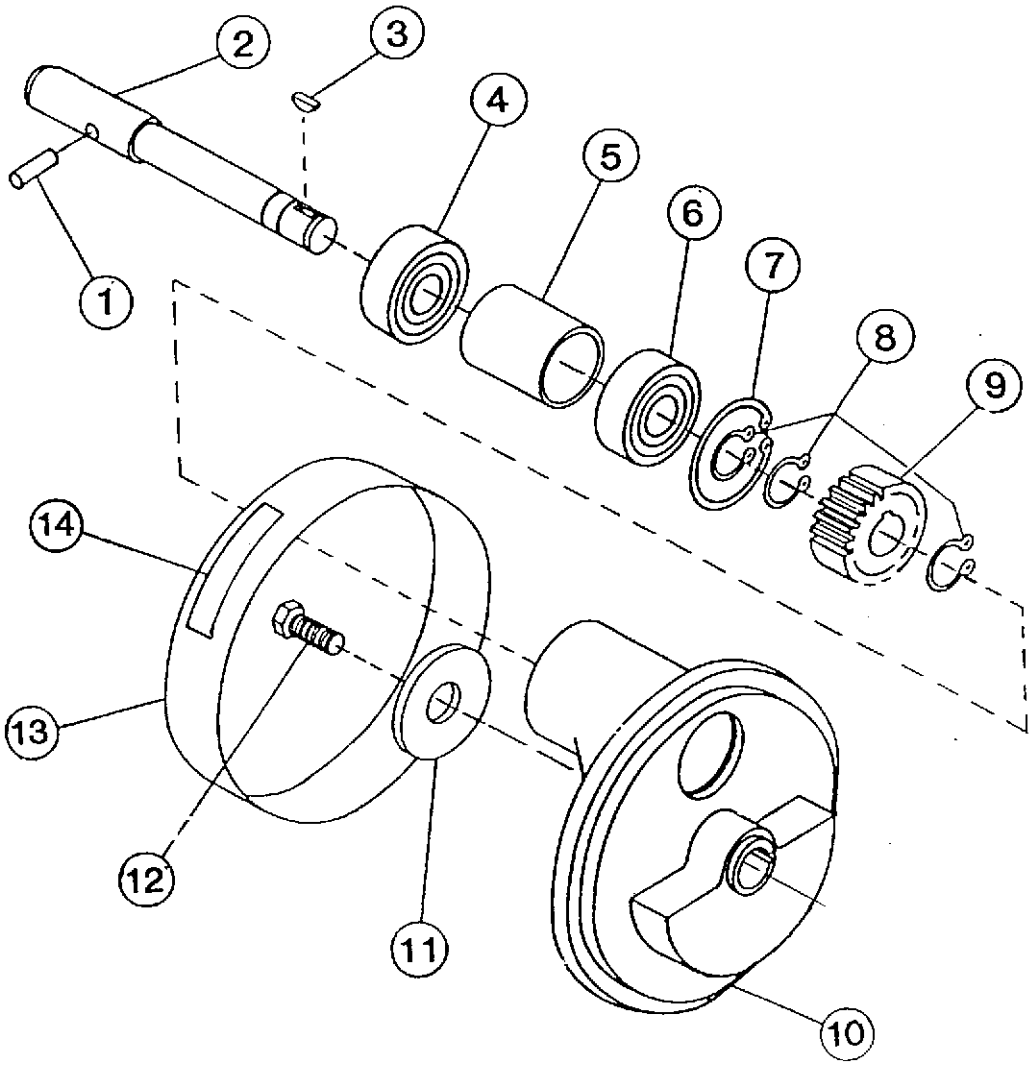
TRANSMISSION
Figure 4

ILLUS NO.	PART NO.	DESCRIPTION	QTY.
1.	1012300	Transmission Housing	1
2.	1012017	Transmission Cover	1
3.	1024041	Spring	1
4.	1200012	Screw, Phillips HD, 10-32 x 1/2"	6
5.	4400065	Washer, Split Lock #10	6
6.	1200076	Washer, Flat #10	10
7.	8800022	Foam Strip	1
8.	1200084	Washer, Steel Flat 1/2	4
9.	1200085	Lock Washer, Split 1/2	4
10.	1200057	Screw, Hex HD Cap 1/2-20 x 1"	4
11.	4400194	Pin dowel	1
12.	1012116	Gear, Internal	1
13.	1200015	Screw, Hex HD Cap 10-32 x 1"	4
14.	4400326	Label, Univex	1



BEATER HEAD ASSEMBLY
Figure 5

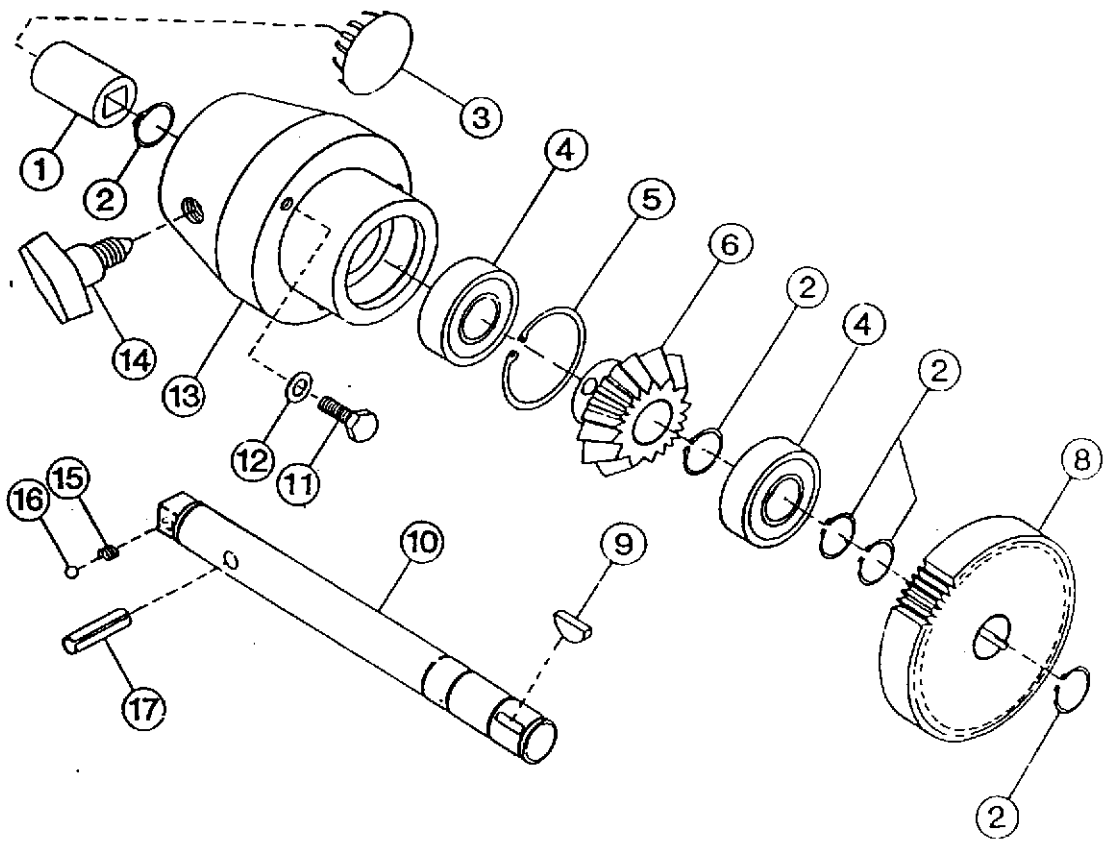
ILLUS NO.	PART NO.	DESCRIPTION	QTY.
1.	1200109	Pin, Drive 1/4"x 1	1
2.	1012107	Shaft, Beater Head	1
3.	1200113	Key, Woodruff #9	1
4.	1012167	Ball Bearing	1
5.	1012110	Spacer, Beater Head	1
6.	1012166	Ball Bearing	1
7.	1200118	Retaining Ring, Internal	1
8.	1200120	Retaining Ring, External	3
9.	1012114	Gear, Beater Head, Pinion Only	1
10.	8800041	Beater Head Casting	1
11.	4400399	Washer 7/16	1
12.	1200051	Screw, Hex Hd Cap 3/8-24 x 1 1/4" L.H.	1
13.	1020002	Ring, Splash	1
14.	4400269	Label, Rotation	1



POWER TAKE OFF ASSEMBLY
Figure 6

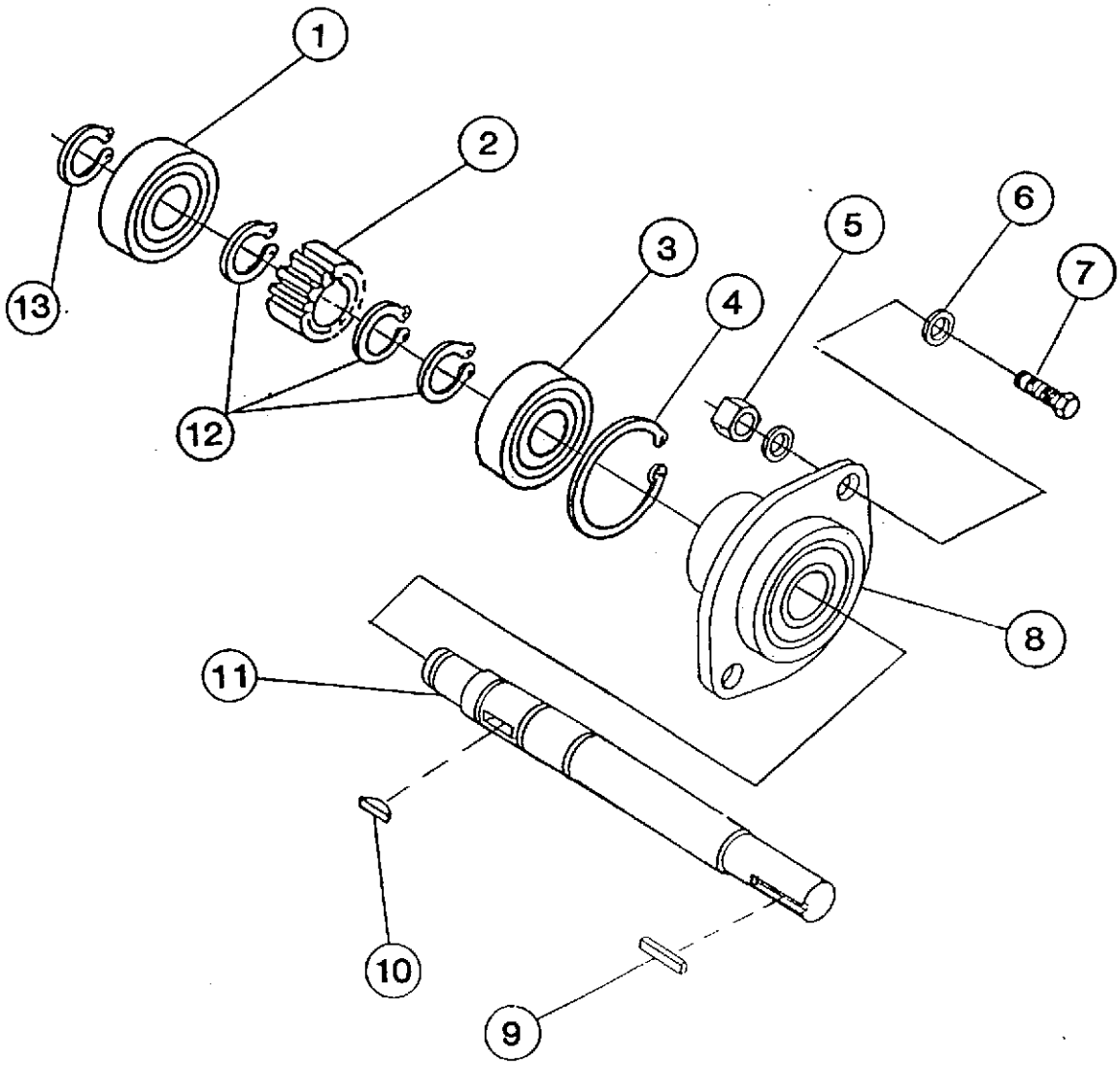
ILLUS. NO.	PART NO.	DESCRIPTION	QTY.
1.	8800012	Adaptor, P.T.O.	1
2.	1200119	Retaining Ring, External	5
3.	8800033	Cover, P.T.O.	1
4.	1030019	Ball Bearing	2
5.	1200117	Retaining Ring Internal	1
6.	1012309	Gear, Bevel, Pinion Only	1
7.		Reserved	
8.	1020004	Gear, Spur	1
9.	1200113	Woodruff Key #9	1
10.	1012320	Shaft, P.T.O.	1
11.	1200022H	Screw, Hex HD Cap 1/4-20 x 1"	3
12.	4400005	Lockwasher 1/4	3
13.	4400025	Housing, P.T.O.	1
14.	4400229	Knob, P.T.O.	1
15. *	4400006	Spring, P.T.O. Shaft	1
16. *	4400016	Ball, P.T.O. Shaft	1
17.	4400022	Roll Pin, 5/16" x 1 1/4"	1

* NOT AVAILABLE. PART OF P.T.O. SHAFT ILLUS. NO. 10



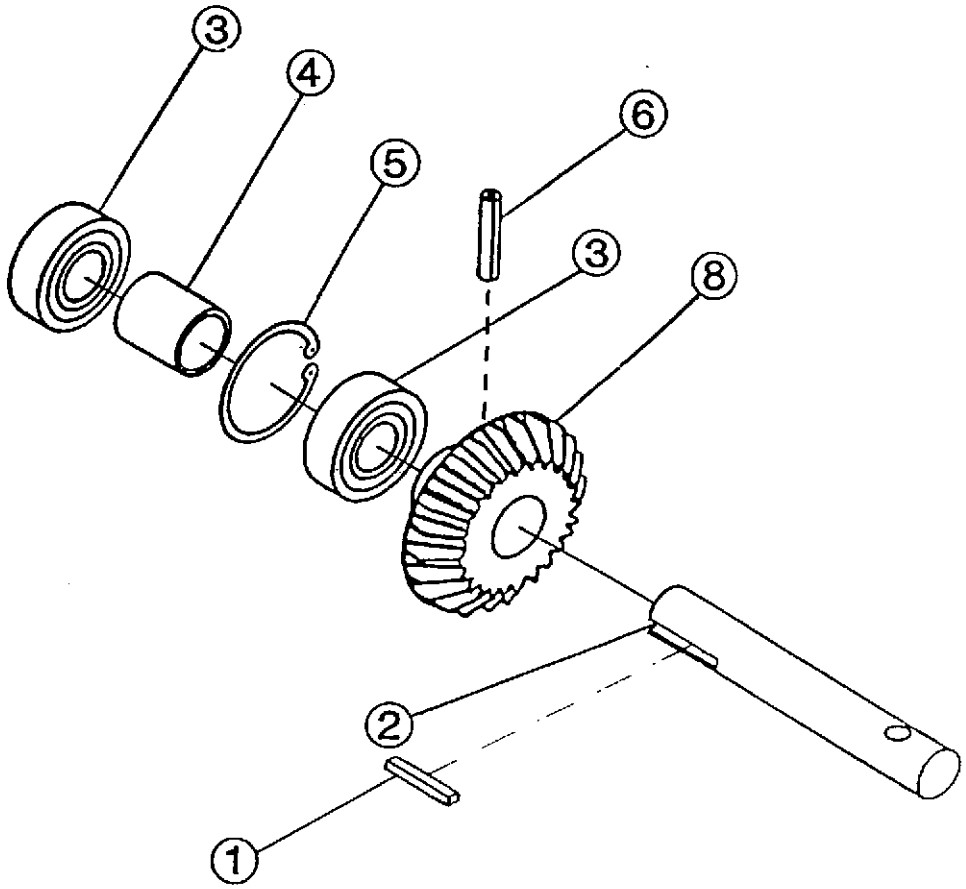
INPUT ASSEMBLY
Figure 7

ILLUS. NO.	PART NO.	DESCRIPTION	QTY.
1.	1012166	Ball Bearing	1
2.	1020010	Gear, Spur Input, Pinion Only	1
3.	1030019	Ball Bearing	1
4.	1200117	Retaining Ring, Internal	1
5.	4400141	Nut, Kep 1/4-20	2
6.	1200075	Washer, 1/4	2
7.	1200025	Screw, Hex Hd 1/4-20 x 3/4	2
8.	1012306	Ball Bearing, Flange	1
9.	4400230	Key - 3/16" sq. x 1 1/2" Lg.	1
10.	1200113	Woodruff Key #9	1
11.	1012322	Input Shaft	1
12.	1200119	Retaining Ring, External	3
13.	1200120	Retaining Ring	1



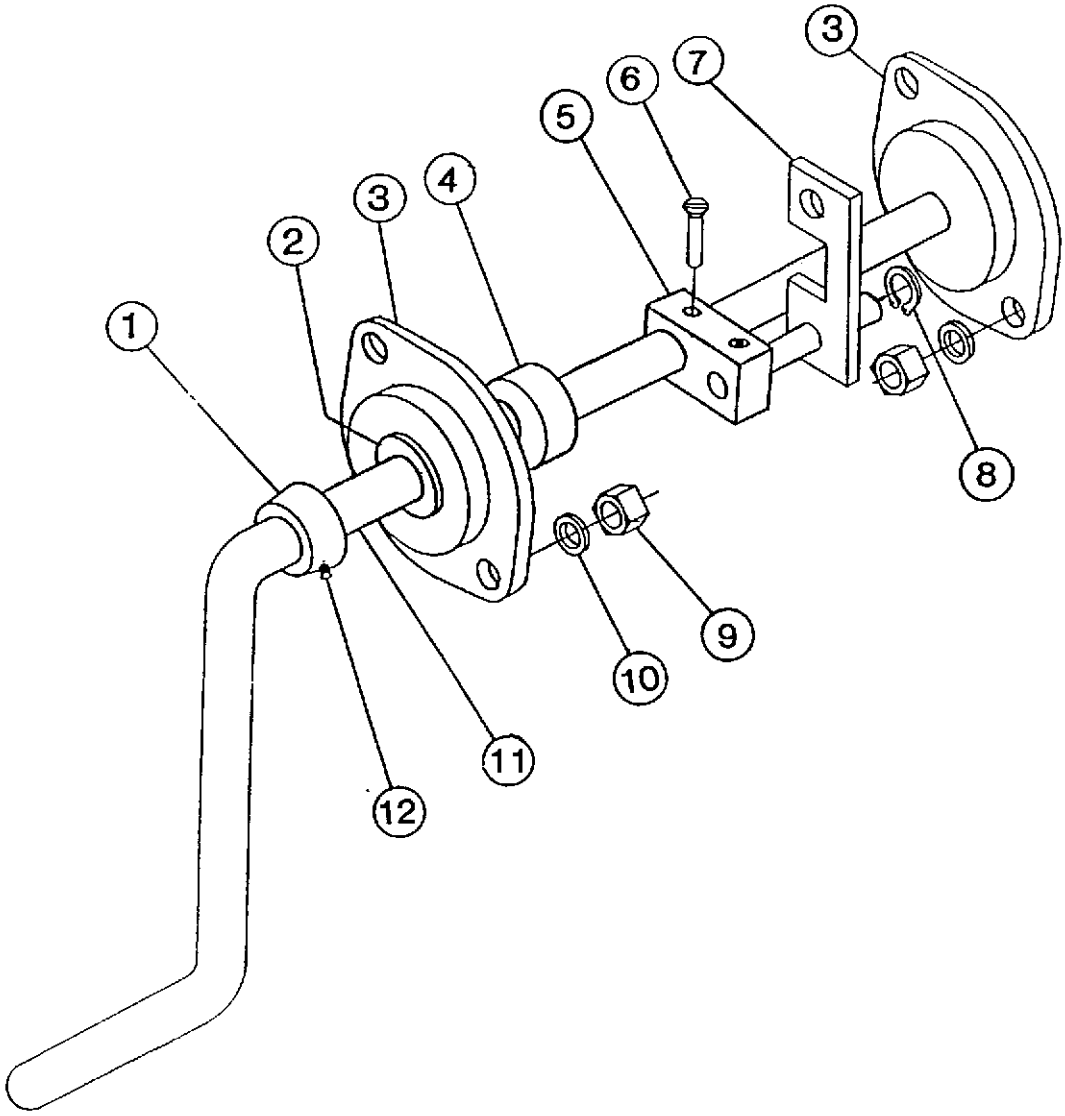
VERTICAL SHAFT ASSEMBLY
Figure 8

ILLUS NO.	PART NO.	DESCRIPTION	QTY.
1.	4400230	Key 3/16 SQ x 1 1/2	1
2.	1012321	Shaft, Vertical	1
3.	1030019	Ball Bearing	2
4.	8800042	Spacer, Vertical	1
5.	1200117	Retaining Ring, Internal	1
6.	1200103	Roll Pin 5/16"x 1 1/2"	1
7.		Rreserved	
8.	1012311	Bevel Gear	1



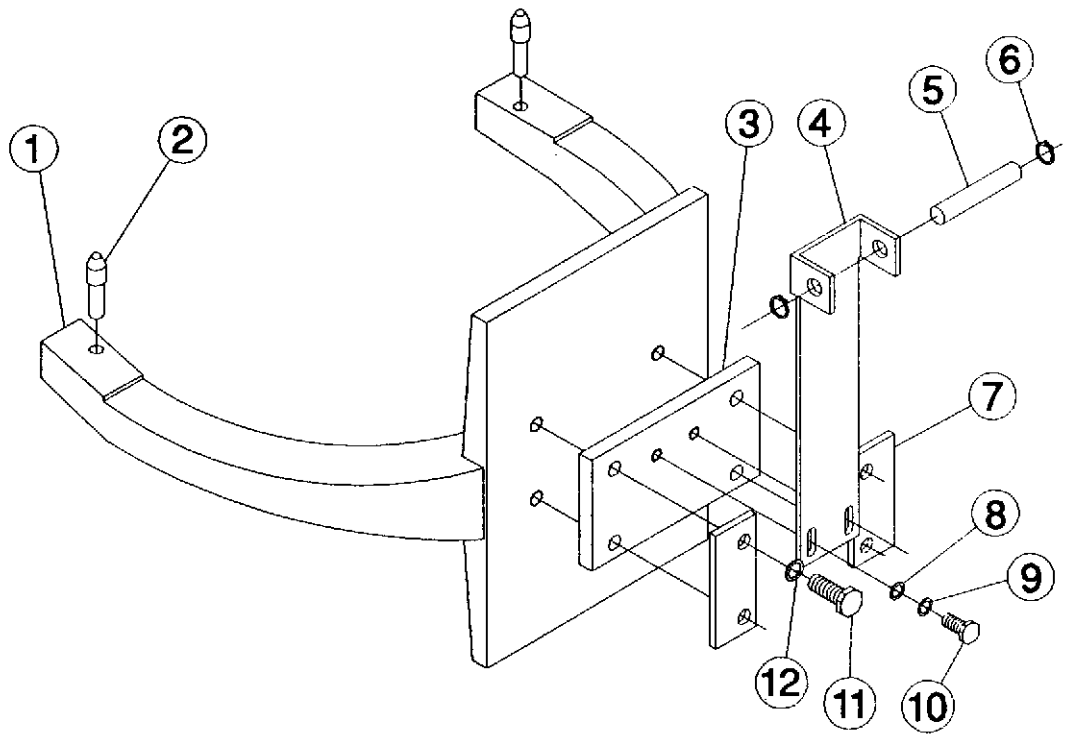
BOWL LIFT ASSEMBLY
Figure 9

ILLUS. NO.	PART NO.	DESCRIPTION	QTY.
1.	1024406	Hub, Bowl Lift	1
2.	1200301	Nylon Washer, 5/8	1
3.	1012304	Bearing, Flange	2
4.	1012305	Collar, Shaft	1
5.	1012317	Cam, Bowl Lift	1
6.	1200425	Screw, Flat Hd 1/4-20 x 1	1
7.	1012352	Link, Connector	1
8.	1200121	Retaining Ring	1
9.	1200060	Nut, Hex 10-32	4
10.	4400065	Lockwasher, Split #10	4
11.	1012348	Lever, Bowl Lift	1
12.	4400118	Roll pin 3/16 x 1"	1



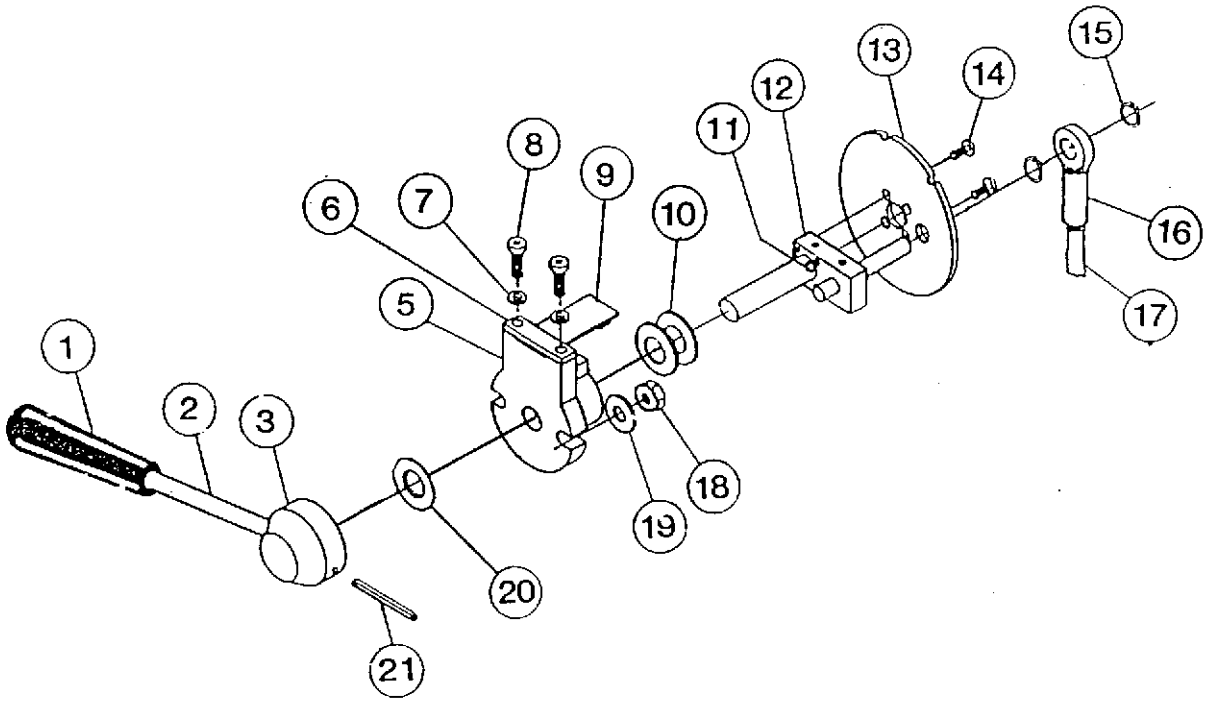
BOWL SUPPORT ASSEMBLY
Figure 10

ILLUS NO.	PART NO.	DESCRIPTION	QTY.
1.	1012330	Support, Bowl	1
2.	4400219	Pin, Bowl Support	2
3.	1012328	Plate, Slide	1
4.	1012354	Yoke	1
5.	1012243	Pin, Yoke	1
6.	1200121	Retaining Ring	2
7.	1012351	Gibb, Bowl Lift	2
8.	1200075	Washer, 1/4	2
9.	4400005	Lock Washer, 1/4	2
10.	4400155	Screw, Hex Cap 1/4-20 x 1/2	2
11.	4400220	Screw, Hex Hd 5/16-18 x 1	4
12.	1200077	Lockwasher, 5/16	4



SPEED CONTROL ASSEMBLY
Figure 11

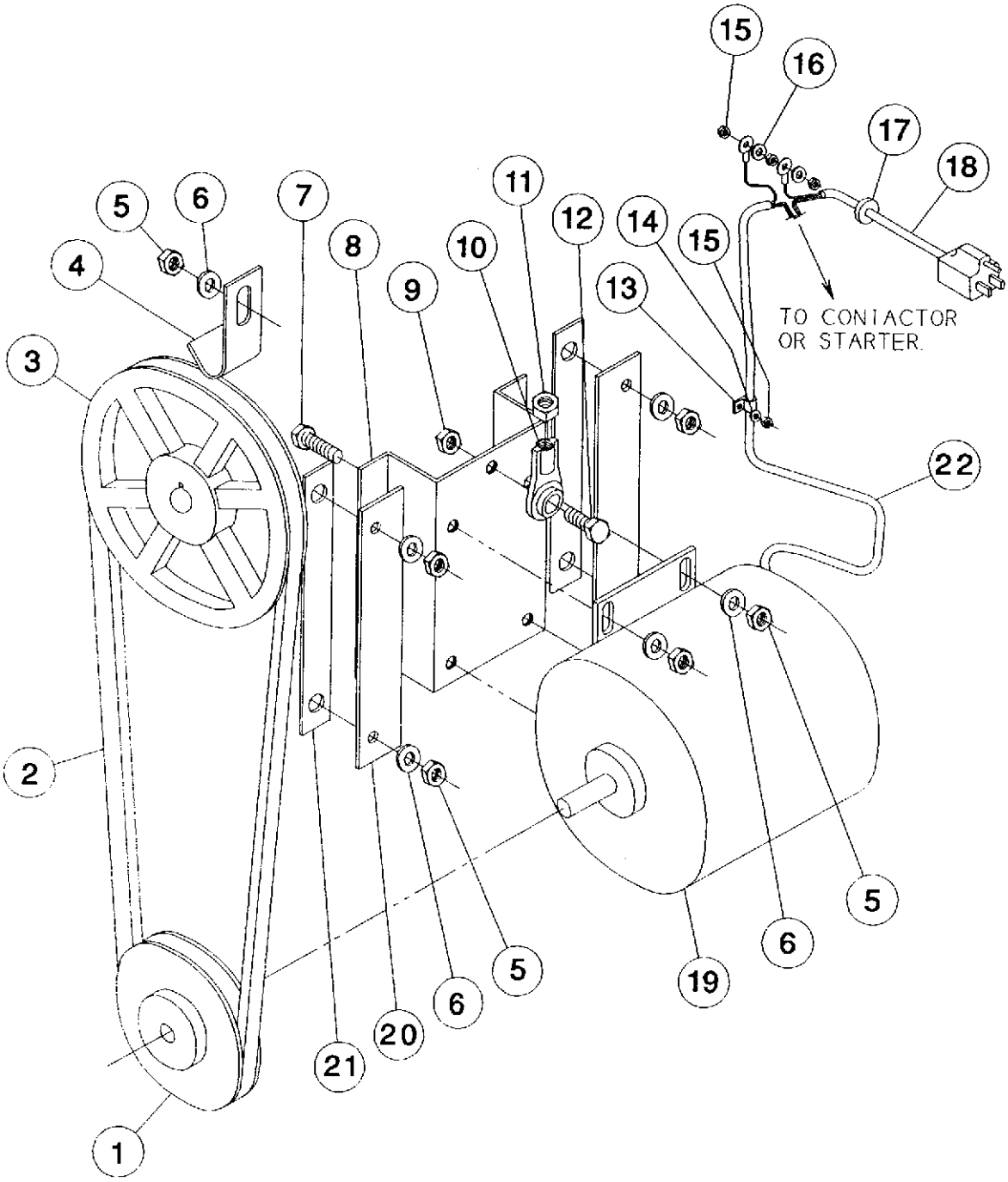
ILLUS. NO.	PART NO.	DESCRIPTION	QTY.
1	4400202	Handle	1
2	1021066	Lever, S.C.	1
3	1012137	Hub, S.C.	1
4	Reserved		
5	1020068	Speed Control Bearing	1
6	1023225	Strap, S.C.	1
7	4400005	Lock Washer 1/4	2
8	4400208	Phillips Pan Hd. Screw 1/4-20 x 1/2"	2
9	1023223	Spring, S.C.	1
10	1200156	Spring Washer 5/8	2
11	1200304	Set Screw 10-32 x 3/4"	2
12	1012359	Cam, S.C.	1
13	1012324	Detent Disc	1
14	1200012	Phillips Hd. Screw 10-32 x 1/2"	2
15	1200121	Retaining Ring	1
16	1012202	Rod End 3/8-24 L.H.	1
17	1012329	Connecting Rod, S.C.	1
18	1200063	Kep Nut 5/16-18	2
19	1200078	Steel Flat Washer 5/16	2
20	1200301	Nylon Washer 5/8	1
21	1200300	Roll Pin 3/16" x 2"	1



VARI-SPEED AND DRIVE SYSTEM
Figure 12

ILLUS. NO.	PART NO.	DESCRIPTION	QTY.
1.	1012373	Pulley, Vari-Speed	1
2.	1012357	Belt, Cogged	1
3.	1020500	Pulley. Driven	1
4.	1023240	Retainer, Belt	1
5.	1200063	Nut, Kep 5/16-18	11
6.	4400105	Washer 5/16	9
7.	1200039	Screw, Hex Hd Cap 5/16-18 x 1	4
8.	1012346	Mount, Motor	1
9.	1200388	Nut, Hex Elastic Stop 3/8-16	1
10.	1012201	Rod End L H	1
11.	1200155	Nut, Hex 3/8-24	1
12.	1200359	Screw, Hex Hd Cap 3/8-16 x 1 1/2	1
13.	4400101	Clamp, Cord	3
14.	1200076	Washer #10	3
15.	1200060	Nut, Hex 10-32	6
16.	4400065	Lock Washer #10	3
17.	1012042	Strain Relief	1
18.	8800200	Cord 115V	1
	8800201	Cord 230V	1
19.	1012361	Motor 115V, 60HZ, 1PH	1
	1012261	Motor 220-240V, 50HZ, 1PH	1
	1012161D	Motor 230V, 60HZ, 1PH	1
20.	1012355	Strap, Motor Slide	2
21.	1012356	Rails, Motor Slide	2
22.	8800202	Cord, Internal	1

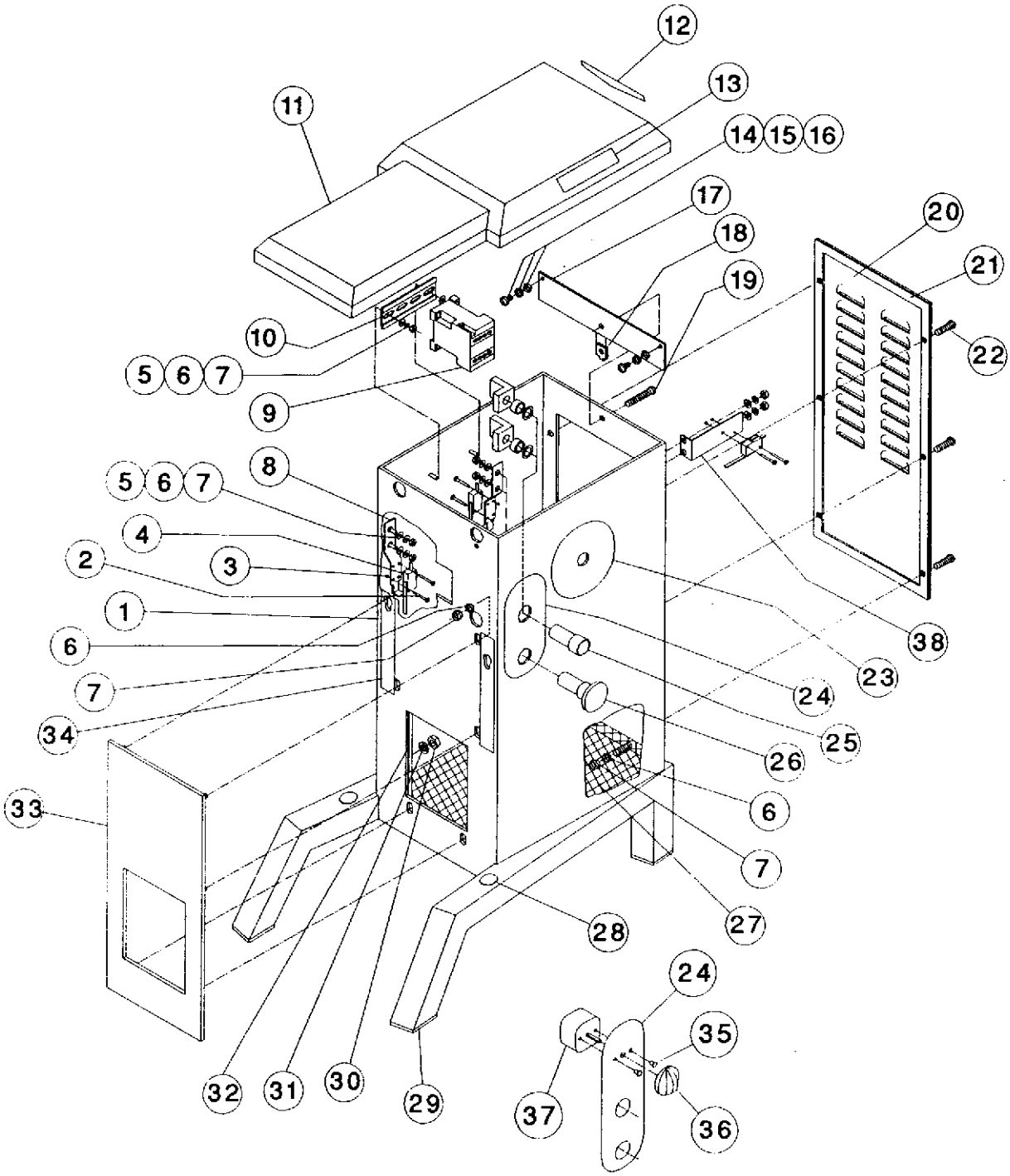
VARI-SPEED AND DRIVE SYSTEM
Figure 12



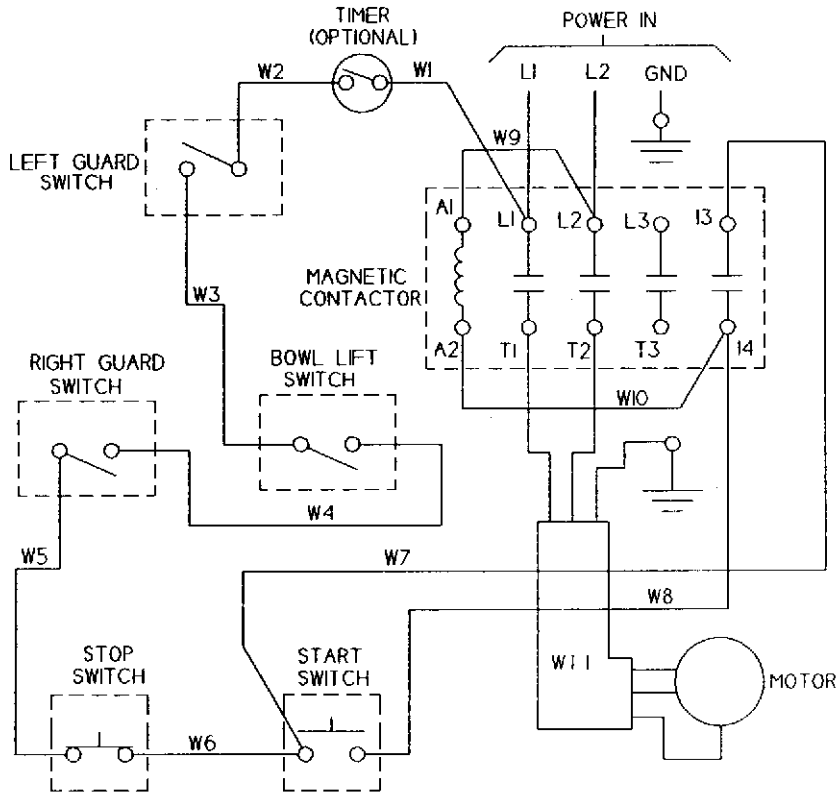
HOUSING ASSEMBLY
Figure 13

ILLUS. NO.	PART NO.	DESCRIPTION	QTY.
1.	1012410	Mixer Housing	1
2.	1200432	Screw, Hex HD 4-40 x 3/4	6
3.	1200433	Nut, Elastic Stop 4-40	6
4.	7100022	Switch, Guard	3
5.	4400061	Lockwasher, #10	8
6.	1200076	Washer, Steel Flat #10	6
7.	1200060	Hex Nut 10-32	16
8.	1012412	Bracket, Guard Switch	2
9.	7100011	Contactor, 115V/60HZ/1PH	1
	7100012	Contactor, 220-240V/230V/50-60HZ,1PH	1
	7100040	Starter, 115V/60HZ/1PH (Canadian Only	1
10.	7100010	Mount, Contactor	1
11.	1012327	Cover, Housing	1
12.	4400114	Decal, Cover Removal	1
13.	4400113	Decal, Stop Unplug	1
14.	1200092	Washer Flat #8	2
15.	4400183	Washer Lock #8	2
16.	1200008	Screw 8-32 x 3/8" PPHD	2
17.	1024042	Spring	1
18.	4400001	Nut, Tinnerman	1
19.	1200422	Screw, sheet metal #12 PPHD 1" LG.	1
20.	1012374	Panel, Rear Access	1
21.	8800022	Foam Strip	7.5"
22.	1200012	Screw, Phillips Hd 10-32 x 1/2"	6
23.	4400312	Decal, Speed Control	1
24.	4400310	Decal, Start/Stop (Without Timer)	1
	4400311	Decal, Start/Stop Timer (Optional)	1
25.	7100021	Push Button, Start	1
26.	7100020	Push Button, Stop	1
27.	1012353	Screening	1
28.	1200125	Shipping Caps	4
29.	4400037	Plastic Feet	4
30.	1200063	Nut, Kep 5/16-18	3
31.	1200078	Washer, Flat 5/17	3
32.	1012375	Plate, Bowl lift Adjusting	1
33.	1012343	Cover, Fixed Slide	1
34.	4400317	Decal, Keep Water Out	2
35.	4400079	Screw, Chz HD M4-.7mm x 6mm LG (Optional)	2
36.	7100028	Knob, Timer (Optional)	1
37.	7100027	Timer, 15min (Optional)	1
38	1012411	Bracket, Bowl Lift	1

HOUSING ASSEMBLY
Figure 13



ELECTRICAL WIRING DIAGRAM
115V, 60HZ, 1PH, 220-240V, 50HZ, 1PH, 230V, 60HZ, 1PH
Figure 14A



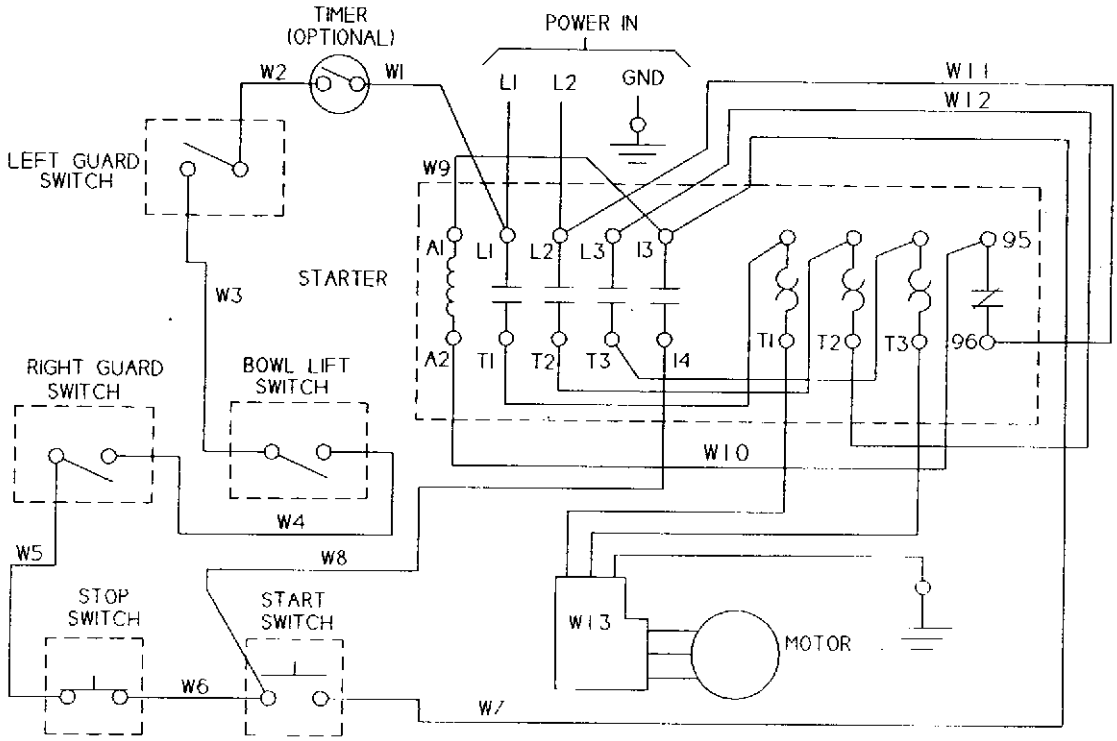
WIRE TABLE							
PART NUMBER	WIRE NO.	GA	SEE NOTE	LENGTH IN INCHES	END A SEE NOTE	END B SEE NOTE	COLOR
	W1	16	3				
	W2	16	3				
8800220	W1 W/O TIMER	16	3	10	1	2	WHITE
	W3	16	3	6	2	2	BLACK
	W4	16	3	7	2	2	WHITE
	W5	16	3	7	1	2	RED
	W6	16	3	2 1/2	1	1	RED
	W7	16	3	19	1	1	BLACK
	W8	16	3	21	1	1	RED
	W9	16	3	2 1/2	1	1	RED
	W10	16	3	2 1/2	1	1	RED
8800202	W11						

NOTES: 1. STRIP 3/8" TWIST AND TIN.
2. STRIP AND SOLDER 1/4" FEMALE QUICK DISCONNECT FULLY INSULATED).
3. MATERIAL: 16GA 1015 TEW CSA AND UL APPROVED.

IMPORTANT: Before making electrical connections, check the specifications on the data plate (located on the rear access panel) to assure they agree with those of your electrical service.

WARNING: Whenever maintenance is being performed or whenever the top cover or rear access panel have been removed, DISCONNECT electrical cord and place a tag on it indicating the mixer is being worked on

ELECTRICAL WIRING DIAGRAM 115V, 60HZ, 1PH
FOR CANADIAN SPECIFICATIONS ONLY
Figure 14B



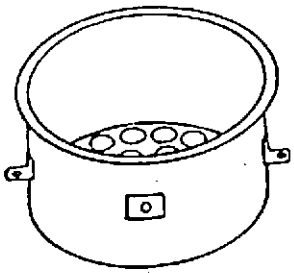
WIRE TABLE							
PART NUMBER	WIRE NO.	GA	SEE NOTE	LENGTH IN INCHES	END A SEE NOTE	END B SEE NOTE	COLOR
	WI	16	3				
	W2	16	3				
	WI W/O TIMER	16	3	10	1	2	WHITE
	W3	16	3	6	2	2	BLACK
	W4	16	3	7	2	2	WHITE
8800221	W5	16	3	7	1	2	RED
	W6	16	3	2 1/2	1	1	RED
	W7	16	3	19	1	1	BLACK
	W8	16	3	21	1	1	RED
	W9	16	3	2 1/2	1	1	RED
	W10	16	3	2 1/2	1	1	RED
	WII	16	3	10	1	1	RED
	W12	16	3	10	1	1	BLACK
8800202	W13						

NOTES: 1. STRIP 3/8" TWIST AND TIN.
2 STRIP AND SOLDER 1/4" FEMALE QUICK DISCONNECT FULLY INSULATED)
3. MATERIAL: 16GA 1015 TEW CSA AND UL APPROVED.

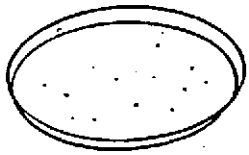
IMPORTANT: Before making electrical connections, check the specifications on the data plate (located on the rear access panel) to assure they agree with those of your electrical service.

WARNING: Whenever maintenance is being performed or whenever the top cover or rear access panel have been removed, DISCONNECT electrical cord and place a tag on it indicating the mixer is being worked on.

COLANDER SET (OPTIONAL)
Figure 15



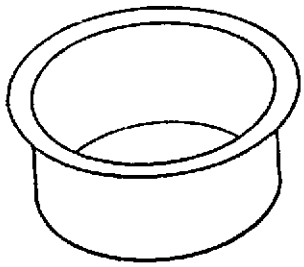
1 Colander
1012234



SIEVES
3 Fine 1023235

4 Medium 1023336

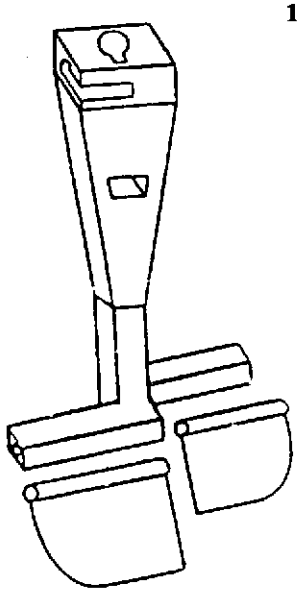
5 Coarse 1023237



2 DRIP BOWL
10

BEATER-WIPER ASSEMBLY
Figure 16

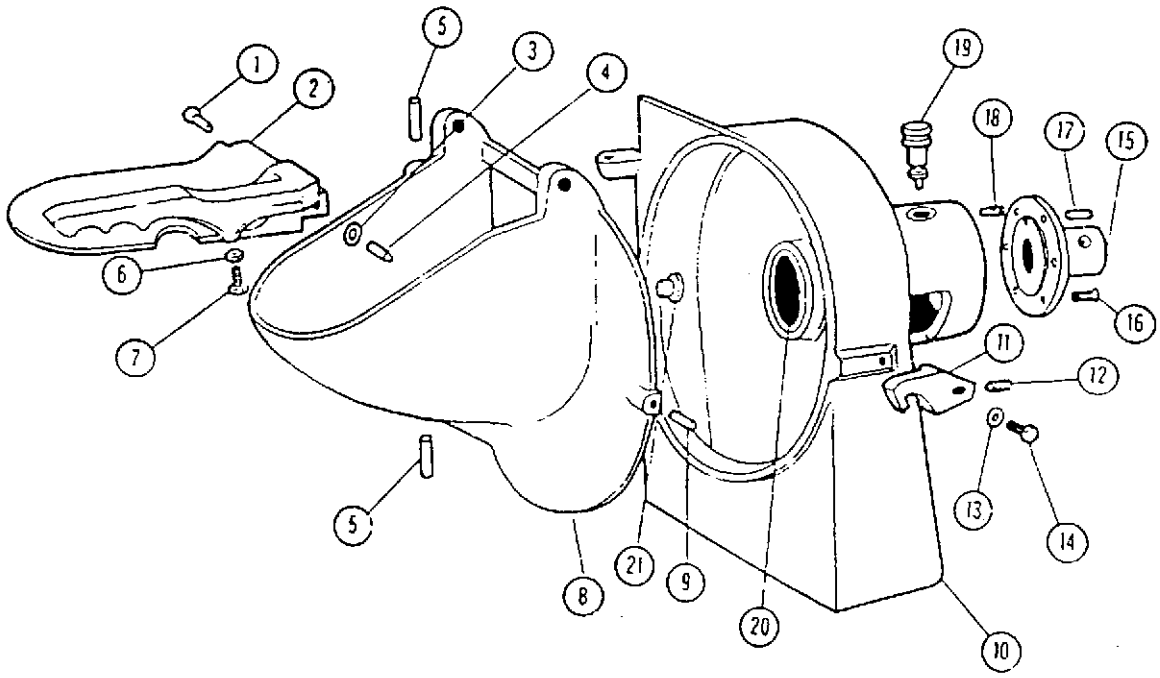
1 BEATER WIPER
10



2 WIPER
10

VEGETABLE SLICER AND PLATE HOUSING ASSEMBLY (OPTIONAL)
Figure 17

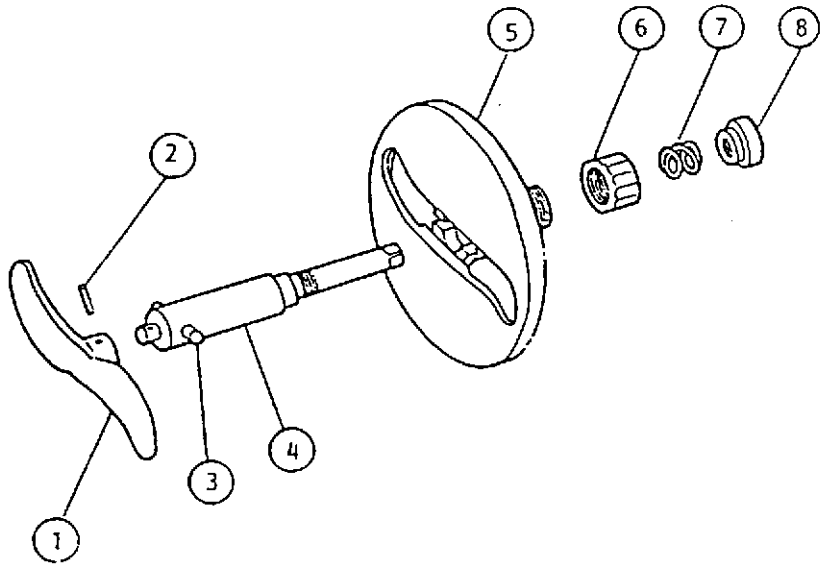
ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	4400028	Pin, Left Pusher	1
2	1000903	Plate, Feed	1
3	4400097	Washer, Nylon 1/2 O.D. x 3/8 I.D.	1
4	4400029	Pin, Right Pusher	1
5	0090004	Pin, Hinge	2
6	4400057	Nut, Stop 1/4 - 20	1
7	1200025H	Set screw 1/4 - 20 x 3/4	1
8	1000902	Housing, Front	1
9	4400400	Pin, Dowel 1/4 x 1" SS	1
10	1000901	Housing, Rear	1
11	1000806	Latch	1
12	8900031	Set Screw 10 - 32 x 3/8	1
13	1200377	Washer, Bevel 5/16	1
14	0090000	Screw, Latch	1
15	1000918	Hub, no. 12 Tapered	1
16	4400091	Screw Pan HD 1/4 - 20 x 5/8	1
17	0090002	Pin Locating 5/16 x 1	1
18	4400184	Set Screw, Full Dog 5/16 - 24 x 1/2	1
19	1000811	Pin, Shaft Lock	1
20	1000914	Bushing, Bronze	1
21	1000923	Button, Plastic	1



SLICER, PLATE ASSEMBLY
Figure 18

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1 *	1000922	Knife	1
2 *	4400004	Pin, Roll 1/4 x 1 1/8	1
3 *	4400092	Pin, Drive	1
4 *	1000820	Shaft, Drive	1
5 *	1000904	Plate, Adjusting	1
6	1000808	Nut, Adjusting	1
7	1000917	Spring, Nut Adjusting	1
8	1000809	Bearing, Thrust	1

Illus. no. 1 - 5 are for illustration. Replaced as an assembly only, NO. 1000912.

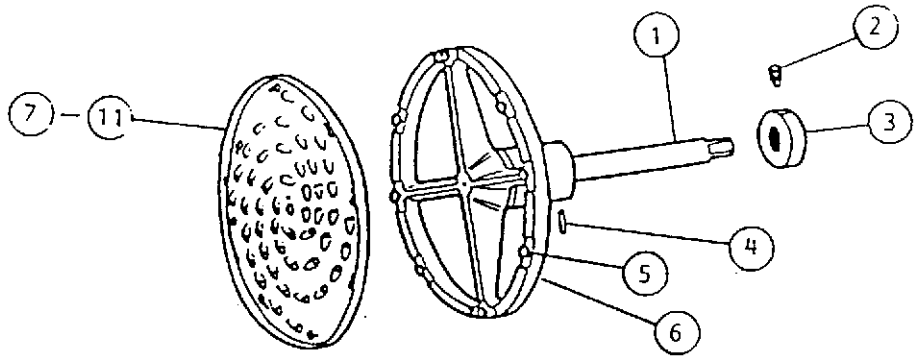


SHREDDER PLATE ASSEMBLY

Figure 19

ILLUS. NO.	PART NO.	DESCRIPTION		QTY
1 *	1000116	Shaft		
2	1200036	Set Screw 5/16 - 24 x 3/8		1
3	1000937	Bearing, Thrust		1
4 *	4400116	Pin, Roll 3.16 x 1 1/2		1
5 *	1000975	Pin, Plate		2
6 *	1000115	Holder, Plate		1
7	1000906	Plate, Grater	OPTIONAL	
8	1000907	Plate, Shredder 3/32	OPTIONAL	
9	1000908	Plate, Shredder 1/2	OPTIONAL	
10	1000909	Plate, Shredder 3/16	OPTIONAL	
11	1000910	Plate, Shredder 5/16	OPTIONAL	

*Illus. NO. 1, 4, 5 and 6 are for illustration. Replaced as an assembly only, NO. 1000913.

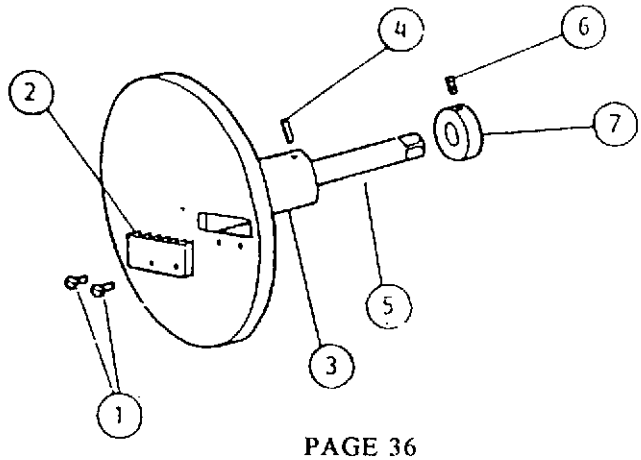


JULIENNE CUTTER ASSEMBLY

Figure 20

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	200203	Screw, Flat HD SS 10 - 32 x 3/8	2
2	1023232	Cutter	1
3	1023233	Plate	1
4	4400116	Pin, Roll 3/16 x 1 1/2	1
5	1000116	Shaft	1
6	1200036	Set Screw 5/16 - 24 x 3/8	1
7	1000973	Bearing, Thrust	1

*Illus. NO> 3 - 5 are for illustration. Replaced as an assembly only.



UNIVEX/VENDOR PART NUMBER CROSS REFERENCE

UNIVEX N0.	DESCRIPTION	VENDOR CODE (SEE PAGE 36)	VENDOR N0.
1012042	STRAIN RELIEF	O	SR6L-1
1012161D	MOTOR, 230V, 60HZ, 1PH	M	5KH39QN9543
1012166	BALL BEARING 6203 ZZ	T	6203 ZZ
1012167	BALL BEARING 6203 LL	T	6203 LLU
1012201	ROD, END R.H.	B	KF-66
1012202	ROD, END L.H.	B	KFL-66
1012261	MOTOR, 220-240V, 50HZ, 1PH	M	5KC37NN335G
1012304	FLANGE BEARING	A	160-5/8
1012305	COLLAR	S	6166K26
1012306	FLANGE BEARING	A	SB204-12-47M-2
1012357	BELT, COG	J	AX38
1012361	MOTOR, 115V, 60HZ, 1PH	M	5KH39QN9397
1012373	PULLEY, VARI-SPEED	P	440001A REV2
1020500	PULLEY	E	AK79 x 3/4
1030019	BALL BEARING 6204 LL	Q	6204 LLU
1200117	RETAINING RING	Z	N5002-185
1200118	RETAINING RING	A	N5002-156
1200119	RETAINING RING	Z	N5101-78
1200120	RETAINING RING	H	N5101-66
1200121	RETAINING RING	H	N5555-37
1200125	CAP, SHIPPING	W	03161-1/2
4400001	FASTENER	X	C-8818-1024-4
4400006	SPRING	D	C0240-040-0310M
4400016	BALL, STEEL 1/4 DIA.	K	1/4 DIA. STEEL
4400037	FEET, PLASTIC	U	S50-4814-BK
4400101	CORD CLAMP	F	3305 WHITE
4400202	HANDLE, SPEED CONTROL	N	D6984
4400229	KNOB, PTO	Y	4400229
7100011	CONTACTOR, 115V, 60HZ, 1PH	V	CA3-16-10-120
7100012	CONTACTOR, 220-240/230V, 50-60HZ, 1PH	V	CA3-16-10-220
7100020	PUSH BUTTON, STOP	I	PF2-BN-C01B
7100021	PUSH BUTTON, START	I	PR3-BN-C10B
7100022	SWITCH	G	TFCJK6ST164AY
7100027	TIMER, 15 MIN.	R	990-SPST-N.O.-4-0-0-1
7100028	KNOB, TIMER	R	BLACK, TIMER KNOB
8800012	ADAPTOR, P.T.O.	Y	8800012
8800022	FORM STRIP	L	1/4 X 3/8
8800033	COVER, PTO	W	D3839
8800200	CORD, ELECTRIC, 115V	C	8800200
8800201	CORD, ELECTRIC, 230V	C	8800201

VENDOR LIST

A Action Bearing
201 Brighton Ave.
Boston, MA 02134

B Alinabal Inc
28 Woodmount Road
Milford, Ct 06460

C American Electric Cord Sets
P.O. Box 802
Bensenville, IL 60106

D Associated Spring Corp
18 Main Street
Bristol, CT 06010

E Browning Mfg. Division
Emerson Electric Co.
Maysville, KY 41056

F Cable Components
P.O. Box 678
Waukesha, WI, 53187

G C & K Component Inc.
2035 Highway 70 East
Clayton, NC 27520-9058

H CNC Stamas Inc
33 Ship Ave
Medford, MA 02155

I Controls Plus Inc.
104 Longwater Drive Unit 3
Assinippi Park
Norwell, MA 02061

J Dayco Corporation
333 West First Street
Dayco, OH 45402

K Eastern Bearing
7096 South Willow Street
Manchester. NH

L Formade
2550 Auburn, CT.
Auburn Hill, MI 48057

M General Electric Co.
2000 Taylor Street
Fort Wayne, IN 46804

N Harry Davies Molding Co.
4920 W. Bloomingdale Ave
Chicago, IL 60639

O Heyco Molded Products
Box 160
Kenilworth, NJ 07033

P Hi-Lo Mfg. Co.
1700-G Freeway Boulevard
Minneapolis, MN 55430

Q Hoover-NSK Bearing Co.
5400 South State Road
Ann Arbor, MI 48106

R I.F.G. Instruments Inc.
190 James Street
Barrington, IL 60010

S McMaster Carr
P.O. Box 440
New Brunswick, NJ 08903

T NTN Bearing Corp of America
N.E. Office
16 Great Stone DR.
Merrimack, NH 03054

U Outwater Plastics Inc.
99-101 President Street
Passaic, NJ 07055

V Sprecher-Schuh
P.O. Box 1671
108 Midland Ave
Port Chester, NY 10573

W Stimpson Inc.
900 Sylvan Ave.
Bayport, NY 11705

X Tinnerman
P.O. Box 6688
Cleveland, OH 44101

Y Univex
3 Old Rockingham Road
Salem, NH 03079

Z Waldes Kohinoor Inc
47-16 Austel Place
Long Island City, NY 11101

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